

What is claimed is:

1. A radiation detector comprising:

an active matrix board including gate lines and data lines arranged in a two-dimensional lattice form, a plurality of high-speed switching elements provided at respective lattice points and connected to the gate lines and the data lines, each having a source electrode, pixel electrodes connected to the source electrodes of the high-speed switching elements, and charge storage capacitances, each being disposed between the pixel electrode and a ground electrode, said active matrix board being formed of a poly-silicon process board; and

a converting layer formed on the pixel electrodes to generate a pair of electron-hole by absorbing one of light and radiation.

2. A radiation detector according to claim 1, wherein said converting layer for generating the pair of electron-hole by absorbing one of light and radiation is a polycrystalline film of one of CdTe and CdZnTe.

20 3. A radiation detector according to claim 1, wherein said high-speed switching elements are formed of polycrystalline silicon thin film transistors.

25 4. A radiation detector according to claim 3, wherein said active matrix board further includes a base plate having high heat resistance and insulating property, an insulating film disposed on the base plate and sandwiched by the gate lines and data lines, an insulating protecting layer disposed on the insulating film above

the switching element, and a common electrode disposed on the converting layer.

5. A radiation detector according to claim 4, further comprising  
5 gate driving circuit to be connected to the gate lines, a signal  
driving circuit to be connected to the data lines, and a signal  
process circuit formed on the active matrix board for connecting  
the gate lines and data lines to the gate driving circuit and the  
signal process circuit.

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